MLST and MLSA of Enterococcus faecalis isolates demonstrating different lesion types in broiler parents

Bisgaard, Magne; Petersen, Andreas; Olsen, Rikke Heidemann; Christensen, Henrik

Publication date:
2009

Document version
Publisher's PDF, also known as Version of record

Under The High Patronage of His Majesty King Mohammed VI

16th Congress Marrakesh 2009

WVPA

XVIth World Veterinary Poultry Association Congress

Marrakesh, Morocco, November 8-12, 2009

Book of abstracts

الجمعية المغربية لأمراض المواجل
ASSOCIATION MAROCAINE DE PATHOLOGIE AVIAIRE

50th Anniversary
WORLD VETERINARY POULTRY ASSOCIATION

MLST and MLSA of *Enterococcus faecalis* isolates demonstrating different lesion types in broiler parents

Bisgaard M., Petersen A., Gregersen R.H. and Christensen H.
Department of Veterinary Disease Biology, Faculty of Life Sciences, University of Copenhagen, 4 Stigbøjlen, DK-1870 Frederiksberg C, Denmark
hech@life.ku.dk

Recent observations on the mortality rate and causes of mortality in broiler parent flocks have demonstrated an increased mortality at the end of production, including systemic infections due to *Enterococcus faecalis*. Information on the epidemiology and lesion types associated with this organisms in broiler parents are, however, almost non-existing. In layers, outbreaks of amyloid arthropathy (AA) was recently demonstrated to be associated with a particular MLST type of E. faecalis, ST82 (Petersen et al., 2009). The aims of the present investigation therefore were to characterize isolates of E. faecalis obtained from different lesions in broiler parents to examine the correlation between MLST/phylogenetic lines outlined and lesion-types. A total of 48 isolates representing seven different flocks were characterized by MLST and MLSA as previously reported (Petersen et al., 2009). A total of seven ST were demonstrated. However, four STs (ST174 (41%), ST177 (23%), ST82 (18%) and ST175 (11%) made up 93% of the isolates associated with lesions. Four isolates from healthy animals belonged to three different STs.
Lesion types investigated included septicaemia, septicaemia and amyloidosis, arthritis and septicaemia, valvular endocarditis and septicaemia, valvular endocarditis, septicaemia and amyloidosis and salpingitis, peritonitis, septicaemia and amyloidosis, respectively. A correlation between lesion type and ST was not demonstrated confirming previous investigations by PFGE. Surprisingly ST82, previously demonstrated in AA in layers, did not result in amyloidosis in broiler parents. ST82 demonstrated lesions of septicaemia (6) and valvular endocarditis and septicaemia (2). Five, two and four different lesion types were associated with ST174, ST175 and ST177, respectively. Amyloidosis was associated with three out of five lesion types of ST174 (6 out of 18 isolates) and one out of four lesion types of ST177 (one out of 10 isolates). Several loci of the genes sequenced were shared among some of the dominating STs and concatenated analysis of all genes are in progress to investigate the phylogenetic relationship among isolates associated with amyloidosis in layers and broiler parents. The present findings are discussed in the light of the overall MLST diversity observed for E. faecalis, just as the economic significance of E. faecalis infections are briefly discussed.